**REMARKS**

The Official Action dated June 27, 2007 has been carefully reviewed. No amendments to this application have been made as none are believed necessary or appropriate at this time.

**Withdrawal of Final Rejection**

Final rejection of claims in this application in the June 27, 2007 is improper and should be withdrawn applicant respectfully urges. The June 27, 2007 Official Action rejects claims 1 - 8, 10 - 13 and 15 - 17 on grounds different from those upon which these claims were rejected in the Official Action of October 24, 2006.

Applicants responded on April 19, 2007 to the rejection of claims expressed in the October 24, 2006 Official Action as anticipated by the U.S. patent No. 5,757,627 of Faulk. Applicant's response indicated how the Faulk patent was not correctly interpreted and how it did not apply to the claims in the application.

The outstanding June 27, 2007 Official Action explains that the October 24, 2006 Official Action incorrectly expressed the manner in which the Faulk patent applied to the claims. The June 27, 2007 Official Action then changes what elements of the Faulk patent are now believed by the examiner to apply to the provisions of the claims and rejects the claims on these new grounds. Nothing in applicant's response to the October 24, 206 Official Action is said to have resulted in the new grounds for rejection and, indeed, nothing in applicant's April 19, 2007 response is responsible for the changed grounds for rejection.

Applicant has not had an opportunity to respond to a non-final application of the Faulk patent to the terms of the claims as now expressed in the outstanding Official Action. It is requested that the "Final" status of the outstanding Official Action is improper and should be withdrawn.

**Restriction, Withdrawal and Requirement to Cancel Claims 18 - 30**

Applicant respectfully traverses the restriction and withdrawal from examination of claims 18 - 30 in this application as expressed on page 3, paragraph 1 in the outstanding Official Action dated June 27, 2007. Although the Official Action does not expressly require selection, applicant selects claims 1 - 8, 10 - 13 and 15 - 17 for further prosecution, with traverse. Applicant traverses and further requests respectfully the withdrawal of the requirement to cancel claims 18 - 30 as expressed on page 3, paragraph 2 of the June 27, 2007 Official Action.

The invention in this application relates to (1) power converters (such as DC-DC converters) having a switching element (such as a synchronous rectifier) in the converter's secondary circuit and wherein the switching element, and thus the converter, is controlled by control circuitry based on the rate of change of a bias voltage produced by a bias winding. The invention relates as well to the method of controlling power converters in the foregoing fashion. All of the claims presented in the application, both originally and with the Response to the first Official Action on April 19, 2007 are directed to the invention as described. Claims 1 - 8, 10 - 13, 18 - 23, 27 and 29 are apparatus claims to the power converter as described. Claims 15 - 17, 24 - 26, 28 and 30 are method claims to the method of controlling a power converter, again as described.

Paragraph 1 of the outstanding Official Action states in conclusory fashion:

> Newly submitted claims 18 - 30 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: use of magnetic storage and synchronous rectifier.
>
> Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 18 - 30 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

In the Official Action, no comparison is made of the subject matter of the claims that are said to be to separate or distinct invention. There is no factual basis given for a holding that claims 18 - 30, presented in the applicant's April 19, 2007 response to the Official Action, are to an invention either "independent" or "distinct" from the invention of the originally presented

claims 1 - 8, 10 - 13 and 15 - 17. Rather, as set out more fully below, claims 18 - 26, 29 and 30 do not claim an invention independent or distinct, but are only differently worded claims to the invention claimed in the originally presented claims. Claims 27 and 28, on the other hand, are each dependent from one of the originally presented claims, merely more narrowly defining the invention claimed in those originally presented claims.

Paragraph 2 of the June 27, 2007 Official Action states:

> This application contains claims 18 - 30 drawn to an invention nonelected by original presentation. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

For the reason that claims 18 - 30 are not directed to an independent or distinct invention, this requirement should now be withdrawn. As for the cancellation of the claims, neither 37 C.F.R. 1.144 nor MPEP § 821.01 require that. To the contrary MPEP § 821.01 provides that the examiner may cancel non-elected claims by examiner's amendment at the appropriate time. Applicant wishes to preserve his right to Petition for withdrawal of the restriction and to have claims 18 - 30 examined in the present application. Applicant is therefore desirous of keeping claims 18 - 30 present in the current application even if the examiner withdraws the claims from further examination (erroneously, applicant would submit).

**Claims 18 - 26, 29 and 30**

Claims 18 to 26, 29 and 30 were presented in the Response to Official Action filed on April 19, 2007. As pointed out there these claims are like, but not identical to, claims indicated as containing allowable subject matter in applicant's underlying PCT application.

Comparing the invention claimed in the newly presented independent apparatus claim 18 to the invention claimed in the original claims in this application, claim 18 (and dependent claims 19 - 23 and 29) is directed to "a power converter for supplying an output power to a load" as are originally presented claims 1 - 8 and 19 - 23. Claim 18 calls for "a magnetic storage element" whereas the originally presented claim 3 calls more narrowly for "an inductor."

Original claim 4 calls more narrowly for a "transformer." That the inductor or the transformer is in a more specifically claimed embodiment, the broader magnetic "storage element" of claim 18, see applicant's specification at page 2, lines 19 - 22. There it is said, "A switched-mode converter includes a magnetic storage element, which may be an inductor, and frequently is a transformer for electrically isolating input from output."

Claim 18 calls for "a switch on a primary side of the magnetic storage element." The originally presented claims do not spell out a switch on the primary side. However, such a switch is not an inventive feature in a power converter as switching DC input power in converters such as DC-DC converters is very old and very well known in the art. Referring to what has been conventional in the art prior to the application's filing, applicant points out at page 1, lines 15 - 17, in Background, "A switched-mode power converter includes at least one primary switch that is used to switch a direct current input on and off to produce a time-varying voltage and current." Put another way, if the primary switch were claimed in claim 1 or a claim dependent from claim 1 that would not make the claim a claim to an independent or distinct invention as the improvement being claimed is in the control of the switching element or synchronous rectifier of the secondary. Likewise cancellation of the "switch on the primary side" from claim 18 would not make that claim a claim to an independent or distinct invention. However, applicant would make this cancellation if that is the basis for the restriction and cancellation requirement as applied to claims 18 - 23.

In every other way claim 18 and original apparatus claims 1 - 8 and 10 - 13 are clearly directed to the same invention. Claim 18 calls for:

> A synchronous rectifier on a secondary side of the magnetic storage element having a switching input, a switching output and a control input for enabling or disabling said synchronous rectifier fro conducting current from said switching input to said switching output.

Compare claim 1's call for:

> A switching device having a switching input, a switching output, and a control input for enabling or disabling said switching device from conducting current from said switching input to said switching output.

The remainder of the newly presented claim 18 and original claim 1 setting out the inventive controlling of the "synchronous rectifier" or "switching device" are virtually identical.

As for the newly presented method claims 24 - 26 and the originally presented method claims 15 - 17, a similar comparison shows that both sets of claims relate to the same invention. In regard to the input of the converter newly presented claim 24 and original claim 15 are closer than the apparatus claims. Claim 24 calls for "providing a power input portion comprising a switch" which corresponds to, but is narrower than, the claim 15 provision "providing a power input portion."

Original claims 15 - 17 do not explicitly call for a magnetic storage element, an inductor or a transformer. Newly presented claim 24 is more specific and does call for "providing a magnetic storage element." This does not result in claim 24 claiming an independent or distinct invention, however. Claim 24 is only more specific in this respect. Like the switch in the primary circuit referred to above, the magnetic storage element, inductor or transformer is commonplace in power converters and does not bear on whether or not distinctly different or independent inventions are claimed. Again an amendment to either claim 15 or a dependent claim from claim 15 calling for the magnetic storage element that is commonplace would not result in the claiming of a separate independent or distinct invention. If such an amendment had been made, or such a dependent claim had been presented, no similar restriction requirement would have occurred. That would be viewed only as a narrowing amendment or presentation of a somewhat more explicit dependent claim.

The presentation of claims 18 - 30 do not in any way require a broadened search by the examiner, since they are directed to the same subject matter as the original claims.

As for claims 27 and 28, these are dependent from originally presented claims 1 and 15, under no circumstances can these two narrowing claims be to an independent and distinct invention.

**The Rejection of Claims 1 - 8, 10 - 13 and 15 - 17 over Faulk**

As was pointed out in applicant's previously filed Response to Official Action:

> Contrary to the invention, Faulk neither discloses that the control circuit determines the rate of change of the voltage of the auxiliary winding nor that the switch 116 is controlled in dependency of this rate of change. Since Faulk does not disclose at least one of the main features of the invention, the invention is neither anticipated by Faulk nor is it rendered obvious for one skilled in the art. Claims 1 - 8, 10 - 13 and 15 - 17 should therefore be found patentable over Faulk.

This remains true. Further, the outstanding Official Action does not address Faulk's lack of the claimed subject matter of claims 1 - 8, 10 - 13 and 15 - 17 in this regard. These claims are not anticipated by Faulk.

Aside from the error acknowledged in the Official Action of June 27, 2007, it is also error, it is respectfully urged, to say that the switching device 110 of Faulk is controlled by a control circuit "determining the rate of change of said bias voltage" which is produced by "a bias winding" as called for in claim 1.

In this regard, in the outstanding Official Action it is stated, referring to applicant's pointing out that the switching device 110 is not controlled in the above manner, " The drain of the MOSFET happens to be connected to the bias winding which therefore functions as stated in the paragraphs indicated previously." However, this is incorrect. As is apparent in both Figs. 1 and 3A of Faulk the drain of the MOSFET switch 110 is connected to the primary winding 102, not to either of winding 278 or 136 that the examiner has identified as bias windings.

At page 3 of the outstanding Official Action, responding to applicant's explanation that Faulk's auxiliary primary winding 278 is a part of the circuit provisions supplying power to the slave controller 142 (Fig. 3A) and not a control for the switching device 110, the Official Action states "278 directly measures a ratio of the output voltage and thereby produces a bias voltage representative of the output power and feeds directly back into the control circuit via at least 260." This is incorrect. The transistor 160 connects the auxiliary primary winding 278 to the Vcc pin of the circuit 142. This pin is not a control pin but a power supplying pin. At col. 11, lines 46 - 63, Faulk states:

> During power up, power is supplied to the slave controller 142 through bleed resistor 268 and bleed resistor 266. The peak detector circuit 148 supplies power to the slave controller 142 after the slave controller 142 has powered up. The input of peak detector circuit 148 is connected to a primary auxiliary winding 278. A Zener diode 272 ensures a capacitor 274 will not be discharged during the off-time of transistor 110. One end of auxiliary winding 278 is connected to one end of a resistor 270 and the other end of auxiliary winding 278 is connected to primary side ground; the other end of resistor 270 is connected to the cathode of diode 272; the anode of diode 272 is connected to one end of capacitor 274, one end of a resistor 276, the anode of Zener diode 262, and the drain of transistor 260; the other end of capacitor 274 is connected to primary wide ground; the other end of resistor 276 is connected to primary side ground; and the cathode of Zener diode 262 is connected to the supply voltage for slave controller 142.

This is clearly contrary to the contention in the outstanding Official Action and makes it clear that the winding 278 does not provide a control function for the transistor 110.

In particular then, comparing the independent claims in this application with the Faulk patent:

Claim 1 calls for:

> a bias winding in said circuit for producing a bias voltage representative of the output power; and
>
> a control circuit for (a) determining the rate of change of said bias voltage, (b) characterizing said rate of change, and (c) controlling said control input as a result of the characterization (b).

Claim 15 calls for:

> providing a bias voltage representative of the output power;
> determining the rate of change of said bias voltage;
> characterizing said rate of change; and
> controlling said control input as a result of said step of characterizing.

None of these provisions is taught by Faulk. The rejection of these claims as anticipated by Faulk is in error. Withdrawal of this rejection at this time is in order and is respectfully requested.

Claims 2 - 8, 10 - 13, 16 and 17 by their dependency include the foregoing provisions distinguishing the independent claims 1 and 15 and are allowable. Allowance of these claims at this time is respectfully requested.

The examiner's comments in regard to the dependent claims are noted. However, as these do not address the content of applicant's independent claims that is missing form the relied-upon patent, no discussion thereof seems necessary or appropriate here. For the record, applicant does not acquiesce in these comments or find it necessary to address them in view of the clear distinction of the parent claims over Faulk.

As for the dependent claims 27 and 28 newly presented in the applicant's Response of April 19, 2007, these claims are dependent from claim 1 and claim 15, respectively, and are allowable, at least, by virtue of their dependency. Allowance at this time is respectfully requested.

Concerning claims 18 and 24 presented in the April 19, 2007 response:
Claim 18 sets forth:

> a bias winding in said circuit for producing a bias voltage representative of the output power; and
> a control circuit operatively connected to:
> (a) determine the rate of change of said bias voltage,
> (b) characterize said rate of change, and
> (c) control said control input as a result of the characterization (b).

Claim 24 sets forth:

> providing a bias voltage representative of the output power;
> characterized in that said method further comprises the steps of:
> determining the rate of change of said bias voltage;
> characterizing said rate of change; and
> controlling said control input as a result of said step of characterizing.

These claims clearly patentably differ from Faulk for the reasons stated above with respect to the originally presented claims. Their allowance at this time is respectfully requested.

Finally, dependent claims 19 - 23, 25, 26, 29 and 30 include by their dependency the provisions of one of independent claims 18 and 24 and are patentable over Faulk for at least that reason. Allowance of these claims at this time is respectfully requested.

Any questions or suggestions regarding the application or the amended claims submitted herewith should be directed to the undersigned attorneys for applicant at the telephone number listed below or by email to the email address listed below.

No fee is believed required, however, authorization is given to charge any additional fees associated with this communication to Deposit Account No. 070135. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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